IMPLEMENTATION OF TOTAL QUALITY LEADERSHIP IN U.S. NAVAL CONSTRUCTION BATTALION UNITS

by

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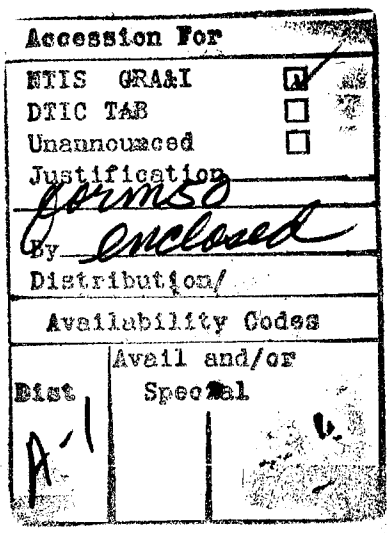

ABSTRACT

IMPLEMENTATION OF TOTAL QUALITY LEADERSHIP

IN U.S. NAVAL

CONSTRUCTION BATTALION UNITS

by

Antonio Crusellas, M.S.E.

The University of Texas at Austin, 1995

SUPERVISOR: Richard L. Tucker

This thesis presents an analysis of the implementation process of Total Quality Leadership (TQL) in Naval Construction Battalion Units (CBU). TQL is a complete leadership and management philosophy which focuses on continuous improvement, teamwork, and training. It is designed to improve services and meet the needs of the customer. This thesis evaluates the implementation process of over twenty Construction Battalion construction Units throughout the United States and in Hawaii. It is the first known attempt at evaluating TQL implementation efforts of Naval Construction Battalion Units. A generic TQL implementation guide was developed for CBUs by analyzing survey data and correlating it with quality guidelines provided by the Department of the Defense and The Construction Industry Institute. Conclusions and recommendations are presented based on results of the analysis.

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1. INTRODUCTION

1.1 Motivation

Total quality Leadership (TQL) is relatively a new concept throughout the Navy. In 1991 Admiral Kelso, Chief of Naval Operations (CNO), directed all Navy commands to adopt the TQL philosophy (DON 1992). This prompted the Navy organizations to aggressively train and educate its personnel. The extent to which TQL is currently being implemented in the Navy varies widely depending on the Commanding Officer's desires. Commanding Officers (CO) who truly believe in TQL, have incorporated active programs throughout their organization. Those who are skeptics are less eager to submerge their organization into this philosophy.

The author selected "Total Quality Leadership" as his thesis topic because he believes it is the most effective leadership and management philosophy for today's military. Federal budget cuts and severe drawdown of military forces have forced military commands to reduce costs, personnel, and improve efficiency (FQJ 1991). The author believes Total Quality Leadership (TQL) is the most effective and smartest means of meeting these demands. CBUs were selected over other Navy organizations for various reasons; the number of CBUs and their geographical locations make them ideally suited for research, they have excellent conditions for implementing TQL, and they resemble civilian construction organizations who have studied the impact of total quality movements. The author served as "Officer In Charge" of a Construction Battalion Unit (CBU) for over two years, and is very familiar with the CBU organization and its mission.

1.2 Purpose

The purpose of this thesis is to analyze the Total Quality Leadership implementation process in U.S. Naval Construction Battalion Units (CBUs), identify implementation successes and failures, identify factors contributing to successful implementation, and provide a generic implementation guide for CBUs.

The thesis will identify the general attitude CBU management personnel have towards TQL. It will identify the extent TQL is being pursued by CBUs and the factors influencing the implementation effort. The thesis will determine the impact "outside" TQL programs have on CBUs. Finally the thesis will determine if there are real benefits to adopting TQL in CBUs. The overall objective is to provide the Navy accurate and valuable data on TQL implementation in CBUs and provide a useful implementation guide which can be utilized by Navy CBUs.

1.3 Scope

The thesis will analyze the TQL implementation process of twenty Naval Construction Battalion Units. Surveys were distributed to CBU management which consisted of the "Officer In Charge" (OIC) and "Assistant Officer In Charge" (AOIC). The surveys will identify the implementation process, successes, barriers, and personal opinions of the CBU organization. Data will be analyzed in order to identify major factors influencing implementation. Survey results and existing implementation procedures from the Department of Defense, Construction Industry

Institute, and Federal Quality Institute will be used to develop a generic TQL implementation guide.

2. BACKGROUND

Military leaders have been traditionally viewed as authoritarian. Individuals who give orders, instill fear, ask for little input, and demand quick results (FQI 1990). In such an environment personnel are often insulated from the true mission requirements and often are unable to identify improvement opportunities. Instead, they focus inwardly on winning awards that attest to their own career accomplishments.

In contrast, TQL creates a whole new set of values for the organization, emphasizing the understanding of mission demands first and then producing high-quality services to meet those demands (DOD1990). In this environment teams strive to continuously improve their services to meet constantly changing mission demands. Their rewards are organizational praise for a job well-done and recognition from the organization for quality improvements, not self serving achievements.

2.1 TQL Defined

There are many approaches to defining TQL. Simply put TQL is "a customer-focused, quality-centered, data-based, team-driven, senior management led process to achieve an organization's strategic goals through continuous process improvement". TQL is not a program that has a start and end like so many other programs that are designed, delivered, implemented, and often forgotten. TQL cannot be achieved by individuals. It is not easy and it certainly is not "business as usual". Several key components must exist for TQL to function properly (Johnson 1993):

* It Must Be Customer Focused

* Emphasis Shall Be Placed On Continuous Improvement

* It Must Be Data-Based

* Teamwork Is Essential

* Employees Must Be Involved

* A Vision Must Be Developed, Communicated, and Applied

* Senior Management Must Be Involved and Lead the Effort

* Managers Must Guide the Organization Through Changes

* Training is Imperative at All Levels

The Total Quality Leadership philosophy provides the overall concepts that foster continuous improvement in an organization. This philosophy stresses a systematic, integrated, consistent, organization-wide perspective involving everyone and everything. It focuses on total satisfaction for both the internal and external customer, within an organization that seeks continuous improvement of all systems and processes. The TQL philosophy emphasizes the use of all personnel, to bring about improvement from within the organization. It stresses use of measurements within a disciplined methodology to target improvements.

The prevention of defects and an emphasis on quality are key elements of the philosophy. The elimination of losses and reduction of variability are also important aims (Crosby 1979). Furthermore, TQL advocates the development of relationships with employees, suppliers, and customers.

TQL is a leadership philosophy which uses a structured, disciplined operating methodology. It is not a quick fix that uses fire fighting techniques. TQL bases decisions on fact, not opinions, as traditional

management often does (FQI 1991). Its use of an individual's capabilities as a primary means of enhancing organizational performance is a major variation from the traditional approach. In the past, military organizations tended to increase resources or improve technology to add value to their services. Instead, TQL focuses on customer satisfaction, continuous improvement, and zero-defect work (Berry 1991).

2.2 TQL, "Just Common Sense"

Some in the Navy believe that TQL is not so revolutionary, that it represents a return to earlier Navy values and levels of performance where individuals worked closer together and were proud of their work DON 1992). One interesting piece of information obtained from this research was how some CBU managers viewed TQL. As will be discussed later, many managers feel TQL is nothing more than "common sense". If this is the case, one must ask why aren't all military organizations doing it? The question can be answered as follows:

It Is Difficult To Change Old Habits.

Everyone has a comfortable way to complete the tasks required to get the job done, and everyone experiences a slight amount of discomfort if asked to change. TQL asks personnel to change the way they plan, interact, and work to get the job done. TQL requires individuals to make major changes which are rarely welcomed.

Opposite Behaviors Have Experienced Rewards In The Past

TQL promotes behavior which is often times completely different from behavior which has been previously rewarded and linked to success.

Successful managers have solved problems themselves instead of coaching a team or empowering a workforce. They have been goal driven and probably never gave up a chance to reach that goal so that others could be successful for the good of the entire organization.

TQL Requires Thinking Differently.

TQL demands a new thinking process, a "system thinking" approach (Gitlow and Gitlow 1987). Personnel must think about what is good for the whole organization, not its parts. TQL asks that everyone adopt a team approach.

Individuals Are Impatient And Short-Term Oriented.

Some organizations have been accused of "microwave management", looking for the quick fix and implementing "flavor of the month" programs. Military leaders are among those managers who demand solutions that will work immediately. Unfortunately TQL takes time to change individuals and organizational cultures. This means that the goals must be oriented beyond the next inspection or performance report. It means that annual strategic plans which are three-year and longer should become the norm.

Fear May Prevent Change.

Individuals may be afraid of change, of failure, of questions, of management, or of success itself (Johnson 1993). Anyone of these can immobilize workers and prevent them from doing what is "just common sense". TQL requires that the individuals take risks, do things differently, and confront the fears that may prevent success.

It Requires New Skills And Knowledge.

Management must recognize and deliver the new skills and knowledge that is necessary to implement a TQL effort (Deming 1986). TQL requires that individuals acquire new skills and knowledge.

It's hard Work!.

No one said TQL was easy, just effective.

2.3 The TQL Process

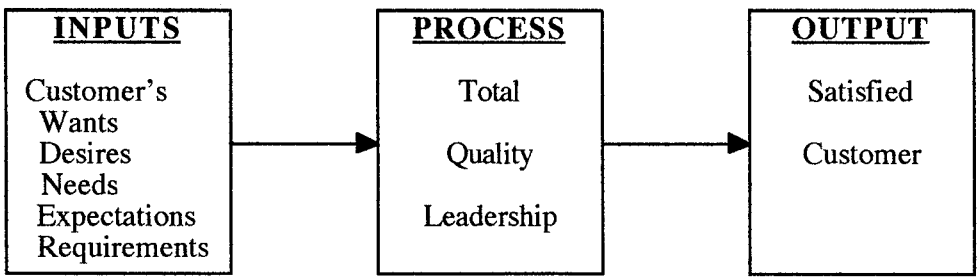
Total Quality Leadership focuses on the continuous improvement of all systems and processes in an organization. In fact, TQL is a process itself, a process within the overall system of the organization (Fellers 1992). The entire organization is a system made up of many processes to accomplish the functions of the organization, one of which is TQL.

A process is a series of activities that takes an input, modifies the input, and produces and output. The TQL process transforms all the inputs in the organization into a product and or service that satisfies the customer. In Figure 1 the overall TQL process consists of inputs received from a supplier, the process itself, and the outputs supplied to the customer. A process has many inputs, including manpower, material, methods, machines, and the external environment. The most important inputs include the wants, desires, needs, expectations, and requirements of the customer. The output of the process is a satisfied customer.

2.4 TQL Evolution

Total Quality Leadership is an "offspring" of the Total Quality

Figure 1. The Total Quality Leadership Process



Management (TQM) philosophy which evolved from a wide range of earlier management practices, and improvement efforts (FQI 1991). TQM has its roots in the "quality" movement that catapulted Japan into its current position as the leading economic power in the global market. The Japanese concept of "quality" initially focused on only product and performance. Only later did management approaches such as TQMchange the emphasis of the concept of quality to customer satisfaction (Ishikawa 1985).

W. Edwards Deming, an American, helped the Japanese with their obsession with quality. Dr. Deming was one of the best known total quality pioneers (Aguayo 1990). He developed the concept of fact-based decisions and the use of statistical controls. His philosophy is based around fourteen points (Appendix A). They include among other things, continuous improvement, driving out fear from the work place, removing quotas, not blaming workers for management-caused problems, etc..

Many others also assisted the Japanese in their pursuit of the "quality" vision during the decades after World War II. The most notable were Joseph M. Juran, Armand V. Feigenbaum, Kaoru Ishikawa, and Genichi Taguchi. Joseph M. Juran, a leading quality planning advocate,

taught the Japanese his concepts of quality planning. Both Juran and Deming stressed traditional management as the root cause of quality and productivity issues. Juran focused on a disciplined planning approach to quality improvement.

Armand V. Feigenbaum, also an American, was the first to use the term total quality. He originated the cost-of-quality concept, which monitored the cost of failures, quality appraisal, and failure prevention costs. This turned managers attention toward quality improvement through the reduction of the cost of quality.

Kaoru Ishikawa, Japan's leading quality expert, geared the quality vision to the masses. In his program, he stressed seven basic tools of quality used for problem solving in the belief that these tools could solve almost any quality problem. These tools included the Pareto Chart, Cause-And-Effect-Diagram, Stratification, Check Sheet, Histogram, Scatter Diagram, and Shewhart Cycle (UT 1995).

During the 1950s, 1960s, and early 1970s, the United States did not feel the need to embrace the quality vision. America was the number-one economic power in the world, the world bought all the goods that the U.S. produced, regardless of quality. However, during the late 1970s, the threat of competition from other countries became apparent to many U.S. industries. America started to investigate ways to become more competitive. As a result, a U.S. style TQM evolved and in the process took advantage of some strengths of American culture such as a strong work ethic, individuality, innovation, and creativity. As it exists today, the American style TQM stresses a totally integrated, systematic, organization

wide approach that requires the transformation of many of the ways America traditionally does business (Fellers 1992).

The Department of Defense (DOD) began to adopt a TQM approach to management before a government-wide effort was undertaken. It began a formal program of productivity improvement in the mid 1970's. The program was largely technique driven and featured the use of productivity investment funds, value engineering, efficiency reviews, quality circles, and contracting out. DOD's efforts to encourage contractors to analyze their processes and to continuously improve the products and services supplied to DOD,were gradually transformed into a TQM approach by 1987. In 1988 the Secretary of Defense issued a DODPosture Statement on Quality, which formalized the Department's commitment to TQM. As a result of DOD's early commitment to this effort, it remains one of the strongest proponents and provides among the best examples of TQMin the Federal Government.

The government wide effort began as a productivity improvement program in 1986, under direction of the Office of Management and Budget (OMB). By mid 1988 the program had gradually evolved into a Total Quality Management movement. A Presidential Executive Order was issued in February 1986, which formally established a government wide effort to improve the productivity, quality, and timeliness of government products and services. Primary emphasis was placed on productivity, the goal was an annual 3% increase in productivity through 1992 (FQI 1991).

During 1988-89 the shift to TQM began in earnest with an emphasis on educating managers in all agencies about TQM practices and recognizing organizations which made significant progress. The Federal

Quality Institute was established in 1988 to be the primary source of information, training, and consulting services to agencies on TQM. Its three major function's were to provide quality awareness seminars and follow-up consultation to senior federal managers to develop and maintain a roster of qualified private sector consultants, and to operate a Resource Center that would be a clearinghouse and referral source of information on TQM (FQI 1992).

The government instituted the President's Award for Quality, similar to the Malcolm Baldrige National Quality Award for the private sector, to recognize a major agency that has demonstrated exemplary quality improvements. The President's Award winners are selected from applicants by a panel of public and private examiners. The Naval Air Systems command was the first recipient of the award in 1989.

In 1990, the government wide leadership functions and resources devoted to TQM implementation in OMB were consolidated into the Federal Quality Institute (FQI) in order to gain greater results from the combined efforts. At the same time, the responsibilities of the FQI were broadened, and additional resources were added to help it carry out its mission. It now offers direct "hands on" advise and technical assistance to agencies to help them get started in the very early stages of TQM implementation(DOD 1990).

2.5 TQM/TQL In The Military

Military personnel frequently respond to TQM success stories by saying that the military is different from civilian organizations. They point out that the military does not operate in a competitive environment,

it is constrained by congressional restrictions, it doesn't have customers, it is a military service industry emphasizing military related processes rather than manufacturing.

But in fact significant gains in quality have been realized by application of TQM/TQL principles in a wide range of military agencies involved in numerous functions, including health care, scientific research, administration, repair and maintenance, and logistics (DON 1992). Many segments of the military have now embarked upon a long-term TQM/TQL effort, and a government wide effort to encourage adoption of quality initiatives is underway.

In some respects, the incentive for the military is similar to that which induced many private companies to embark upon TQM. In light of severe budget cutbacks, military leaders are pressed to carry out their current missions more efficiently. But if anything, the public demand for quality military service and performance is increasing.

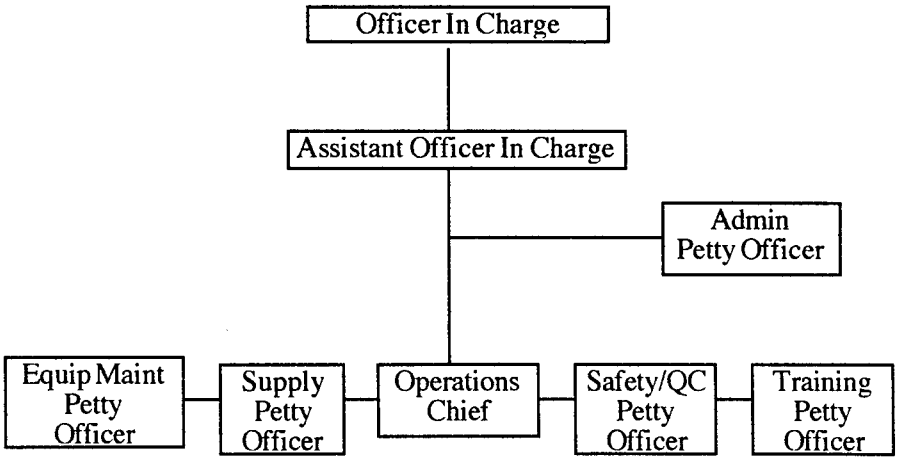
Implementation of TQM/TQL in the military is no easy task. Making far-reaching, lasting changes is difficult. The military is a huge conglomerate of activities and functions generally operating under inflexible and sometimes outdated management practices and principles. The objectives of the military wide TQM/TQL effort is to break down the rigidity and excess structure of the military branches and to devise ways to enlist the energies and talents of the workforce in order to best meet national defense requirements (FQI 1991).

2.6 Naval Construction Battalion Construction Units

Naval Construction Battalion Units are military construction organizations which resemble medium size civilian construction contractors. They range in size from 45 to 65 military personnel. CBUs are operational components of the Naval Construction Force (NCF) assigned to designated shore activities within the continental United States. During peace time they perform construction and repair projects of shore facilities, conduct unit and individual skill training, and they support disaster recovery missions. During war time they provide construction unit contingency augment capability to Fleet Hospitals and NCF units. During normal peace time operations, they are directly subordinate to either the 2nd or 3rd Naval Construction Brigade and will be employed as directed by the Commanding Officer of the base they are located in.

The typical CBU construction organization is depicted in Figure 2.

Figure 2. CBU Construction Organization



Personnel attached to CBUs are referred to as "Seabees". CBU personnel are trained as Surveyors, Plumbers, Electricians, Equipment Operators, Steelworkers, Carpenters, Masons, etc.. The Seabee name stems from the first letters of the words "Construction Battalion" as well as the famous Seabee insignia. The Officer In Charge (OIC) is the only commissioned officer in the organization. He is usually an engineer and holds the rank of Lieutenant, Lieutenant (Junior Grade), or Chief Warrant Officer. The Assistant Officer In Charge (AOIC) is the senior enlisted (non-commissioned officer). He serves as the unit's administrator and assistant to the OIC. The AOIC is a key player in the organization due to his experience and time in the Navy. The Operation's Chief is the third highest ranking in the organization. He is responsible for coordinating, organizing, and executing all construction projects. The Equipment Maintenance Petty Officer is responsible for all maintenance and repair of the construction equipment. The remaining Division Heads work independently, in direct support of the construction effort as reflected in Figure 2.

CBUs are self-sustaining organizations which rely on little outside support to perform their mission. They own, operate, and maintain all of their construction equipment. As the Navy's construction specialists, they design most of their projects and identify and procure all required materials.

The CBU works directly for the Commanding Officer (CO) of the Naval Installation. The CO assigns the CBU with construction projects he deems necessary to support his station. The work may range from constructing

sidewalks to erecting a pre-engineered storage warehouse. Due to increasing funding restraints, CBUs have become a valuable resource to Commanding Officers. CBUs are a source of "free construction labor" which COs are relying on much more than before. Construction work which was previously contracted out to civilian contractors is being diverted to CBUs which can perform the work much cheaper.

3. RESEARCH METHODOLOGY

3.1 Data Gathering

At the time of this study there were twenty known Naval Construction Battalion Units located in the continental United States. Surveys were distributed on June 1995 addressed to the Officer In Charge.

Attempts to obtain Navy specific TQL data was difficult. It resulted in numerous phone conversations with Naval Station Mayport's TQL Department in Florida, the Chief of Naval Operation's (CNO) TQL Office in Washington D.C., the Civil Engineer Corps Officer School at Pt. Hueneme, California as well as several phone conversations with CBU Officers In Charge. Data pertaining to the Department of Defense was readily available via CNO's office electronic bulletin board as well as literature from University of Texas.

The 2nd and 3rd Naval Construction Brigades were first contacted to determine if they had directives and/or instructions mandating implementation of TQL in CBUs. Discussions revealed no such directives or requirements currently in place. The author's TQM graduate class (CE 395U) notes served as a valuable source of information, especially data provided by guest speakers representing local construction organizations.

3.2 Literature Review

Most of the literature review used for background information involved TQM books available at the University of Texas libraries and the Construction Industry Institute. This source of information provided good insight on civilian and government approaches to quality management.

The CNO's electronic bulletin board, the author's TQM class notes and class project were also proved valuable.

3.3 Data Surveys

The survey package consisted of a cover letter, one OIC survey, one AOIC survey, and two returned stamped envelopes. The cover letter introduced the author and identified the purpose of the survey. The OIC survey consisted of twenty questions and the AOIC survey, consisted of four questions. A sample of the survey package is included in Appendix B, C, and D. The survey questions were designed to identify:

* Whether a TQL Program Was in Place
* Phase Of Implementation
* Description Of Implementation Process
* Type Of Outside Support
* Type and Quantity of TQL Training
* Barriers to Implementation
* Successes and Pitfalls of TQL Effort
* Personal Opinions/Suggestions Regarding TQL
* Factors Influencing Implementation Process

The AOIC survey was an excerpt from the OIC survey. Its purpose was only to solicit personal opinions and suggestions regarding the use of TQL in CBUs. The results of the survey are discussed in Chapter 4.

3.4 Analysis Method

The first step in the analysis process was to identify the development and application of TQL in the civilian and federal sectors. Emphasis was

placed on the implementation of TQL in the federal government, specifically the Department of The Navy. Numerous literature sources were reviewed in an effort to gain a better understanding why the Navy adopted the TQL philosophy, their implementation approach, and current status of its TQL effort. Data was obtained through literature review and telephone conversations with various Navy representatives.

Surveys were prepared using data obtained from background research and analysis. The surveys provided both quantitative and subjective data which required interpretation and analysis. Examples of quantitative data included the number of CBUs who had adopted TQL, when TQL was implemented, type of TQL training, and type of outside support. Examples of subjective data included, reasons for adopting TQL, improvements and drawbacks stemming from TQL, personal opinions about applying TQL, and suggestions for implementing TQL. The main purpose for analyzing this data was to determine similarities, trends, and lessons learned among the twenty CBUs.

In developing the CBU implementation guide, detailed analysis of existing implementation procedures were performed. These included implementation procedures from the Department of Defense, Department of the Navy, Construction Industry Institute, and those discussed in TQM Class CE 395U previously mentioned. Survey data results served as evaluation criteria for developing CBU implementation procedures. The data results were used to identify and tailor existing implementation guidelines to best meet the needs of the CBU organization.

4. PRESENTATION AND ANALYSIS OF DATA

4.1 Naval Construction Brigades

Phone calls were made to the 2nd and 3rd Naval Construction Brigade representatives to better define the Brigade's role in the TQL implementation process. Both representatives indicated the Brigade had no specific directives or instructions requiring CBUs to implement TQL. They strongly supported and encouraged the use of TQL; however, they recognized their limited involvement in the CBUs implementation effort. One important reason contributing to this limited involvement was the NCB's recent administrative control over the CBUs. This recent "takeover" has not allowed the Brigades to identify their involvement in the CBU TQL implementation process.

The Brigades are responsible for evaluating the overall operation and performance of their CBUs. This annual assessment is performed by one or two Brigade representatives. All operational areas of the CBU are looked at and inspected. Both Brigade representatives agreed that adding TQL to their annual assessment would not only assist the CBU but provide valuable information to the Brigade.

When the representatives were asked how many CBUs had adopted the TQL philosophy, their response were quite different. One representative believed only a few of their CBU's were implementing TQL. The other felt confident the majority of their CBUs were in the implementation process. This same Brigade was in the process of holding their CBU annual conference. They had dedicated an entire day of TQL training to their agenda. Although there were apparent differences in

involvement between Brigades, it was clear they both had little direct influence over the implementation process.

4.2 Survey Results

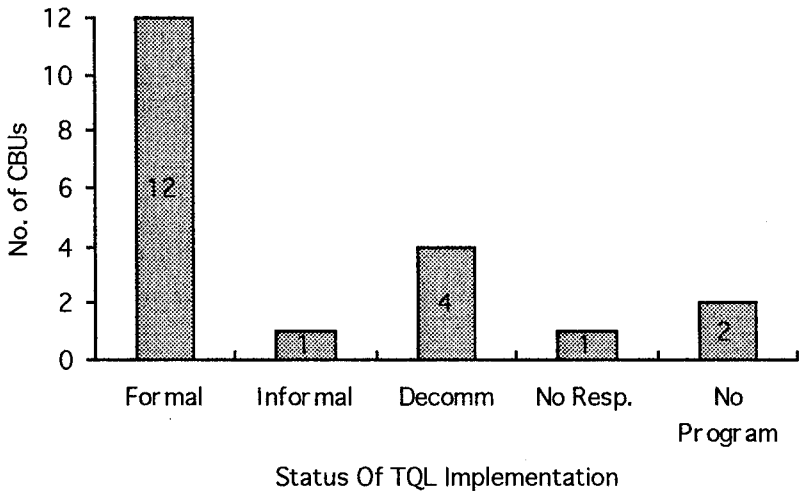
Of the twenty surveys mailed, four were returned unopened indicating the CBU was decommissioned. One CBU failed to respond entirely. Of the fifteen CBUs who responded, fourteen OICs and seven AOICs returned their survey; only six CBUs provided a response from both the OIC and AOIC.

The surveys were the primary source of data during this research. More data would have been desirable; however a 75% response rate was considered acceptable.

Question 1: Has your organization adopted the Total Quality Leadership philosophy?

A brief definition of TQL was provided to avoid any confusion. Thirteen of the fifteen CBUs indicated they had adopted some form of TQL, two indicated that no program was in place. Of the thirteen CBUs, seven were on the east coast, six were on the west coast. This equal implementation distribution was not anticipated based on prior discussions with Brigade representatives. One would expect that the group of CBUs receiving greater TQL support would pursue TQL more aggressively. At this point it became apparent there were other factors having greater influence on the implementation process than Brigade support. Results to question one are shown in Figure 3.

Figure 3. TQL Implementation Status

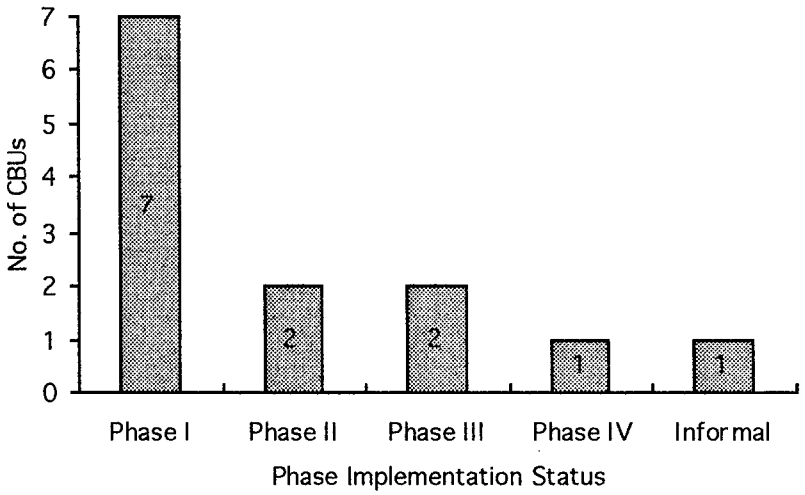


Question 2: What TQL phase is your organization currently in?

For those CBUs who adopted TQL, the survey tried to identify how far the unit had progressed in their implementation process. The survey outlined four typical implementation phases and provided a fifth choice as "informally applied". The four phases included; (I) Exploration and Commitment, (II) Planning and Preparation, (III) Implementation, and (IV) Sustaining.

Of the thirteen CBUs who adopted TQL, seven were in Phase I, two in Phase II, two in Phase III, one in Phase IV, and one adopted TQL informally. Consistent with question 1, implementation progress appeared equal on both the east and west coast. These results reaffirmed the assumption that both east and west coast CBUs were pursuing TQL at the same pace and of the small impact the Brigades appear to have on the implementation process. The results to question two are shown in Figure 4.

Figure 4. TQL Implementation Phase



It is interesting to note that of the thirteen CBUs who responded as having adopted TQL, only eleven filled out all the remaining survey questions. The following analysis of results will therefore apply to these eleven CBUs.

Question 3: When did your organization adopt TQL?

In order to determine the "rate of progress" of the implementation process, question three attempted to identify the month and year TQL was adopted. It was surprising to find that most CBUs could identify the month and year implementation began. These results were interpreted as signs of CBUs possibly having formal implementation plans. The high turnover of personnel explained those few CBUs who could not identify the start of implementation. If the survey was filled out by a newly assigned OIC it is conceivable that he/she could not determine the exact month

implementation began prior to his/her arrival. The results of question 3 combined with data from question two are illustrated in Table 1.

Table 1. TQL Implementation Phase Duration

CBU	Implementation Phase	Implementation Duration	Start Date
1	III	unknown	unknown
2	II	9 months	Jan 95
3	I	12 months	Dec 94
4	I	unknown	unknown
5	III	21 months	Jan 93
6	II	3 months	Jan 95
7	I	24 months	Dec 93
8	I	5 months	April 95
9	I	18 months	Mar 94
10	I	18 months	Mar 94
11	IV	11 months	Oct94
12	I	unknown	unknown
13	Informal	unknown	unknown

Question 4: Does your host command have an active TQL program?

The author is aware of the strong influence the "host command" has on CBUs. The host command is the "parent" organization the CBU is serving under. In most cases it is the Naval Station command where the CBU is

physically located on. The survey specifically tried to determine the impact the host command's TQL program had on the CBU. Question four identified how many CBU host commands had active TQL programs.

All but two CBUs who had adopted TQL were serving under a host command who had a TQL program. This data confirmed the anticipated impact host command TQL programs have on CBUs. One of the two CBUs who unilaterally adopted TQL, had done so informally. This is could be contributed to the lack of guidance, possibly host command guidance.

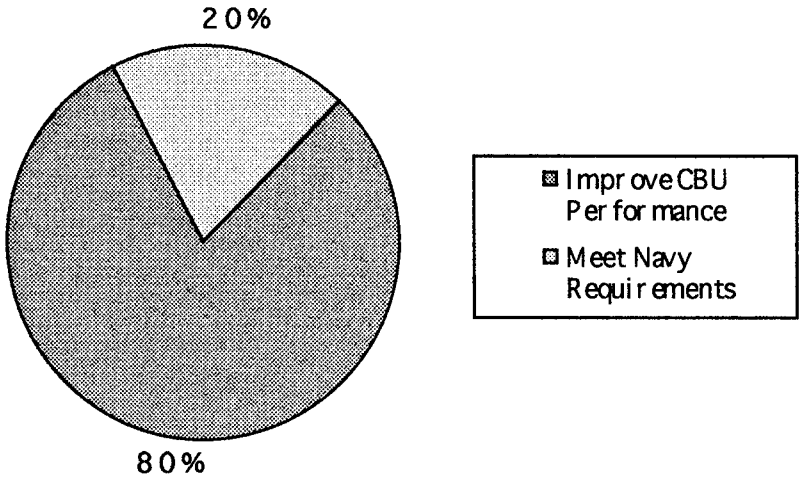
Question 5: What is the primary reason your organization adopted TQL?

This question tries to identify the motivation for adopting TQL. It gives the respondent four options: Complying With Navy Requirements, Desire to Improve CBU, Comply With Host Command's TQL Initiatives, and Other. The majority of the CBUs felt the main motivation for adopting TQL was desire to improve their performance. The author considers that a sense of ownership and pride in their organization prompted the OICs to select this response over others. Figure 5 summarizes the results to question five.

Question 6: Who is responsible for running your TQL program?
Question 7: Who initiated (started) your TQL program?

Question six and seven tried to identify the "key players" responsible for initiating and sustaining the implementation process. Four possible answers were provided: CBU, Host Command, CBU-Host Command, and Other. Almost all CBUs initiated and maintained their own TQL program This is reasonable in view of the high degree of autonomy most CBUs experience. Figure 6 and 7 illustrates the results to question six and seven.

Figure 5. Reasons For Adopting TQL



Question 8: Briefly list the major steps of your TQL implementation process.

In order to identify trends and similarities among implementation processes, the respondents were asked to list the major steps taken to implement TQL. With the exception of one CBU who was in the "sustaining" phase the remaining had very similar implementation steps. These consisted of; Assessment, Training, Developing Mission/Vision, and Establishing Quality Management Boards (QMBs)/Process Action Teams (PATs). This commonality between CBUs is thought to have resulted from, standard Navy training, networking among CBUs, and a centralized support system. Further data proved the last two assumptions incorrect.

Question 9: Has your organization adopted other TQL philosophies than those prescribed by the Department of the Navy (Deming).

Figure 6. Organizations Responsible for Initiating TQL

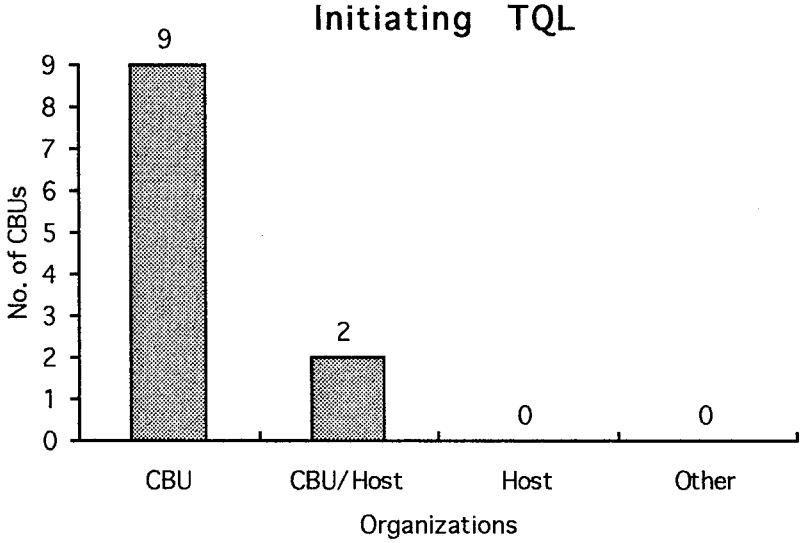
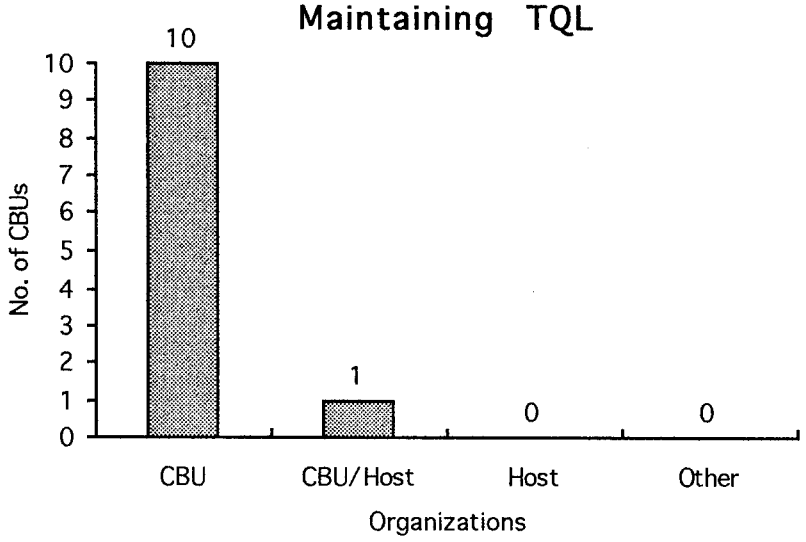


Figure 7. Organizations Responsible for Maintaining TQL

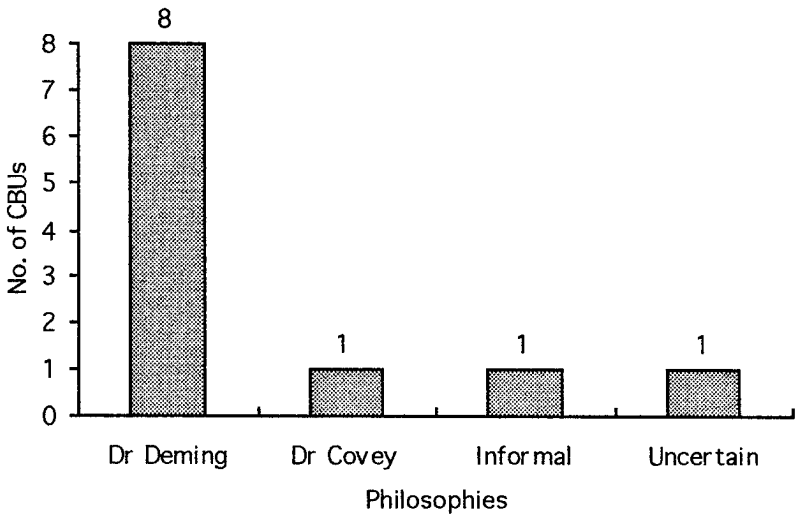


The author wanted to determine if CBUs had adopted a non-Navy TQL style. This data was relevant because a TQL approach other than Deming's would

modify the final implementation guide. The Navy's TQL philosophyis based on Dr. Deming's total quality teachings. This approach was selected by the Navy because of its concepts of continual improvement, its emphasis on leadership, and due to it being more of a philosophy than a program.

Responses to question nine were almost unanimous, ten CBUs were utilizing the Navy prescribed TQL philosophy, one had adopted "Dr. Covey's Seven Habits of Highly Effective People", one was implementing TQL informally, and one was uncertain. The use of Navy TQL by most CBUs facilitated the development of the implementation guide since most CBUs were speaking the same language. The results to question nine are provided in Figure 8.

Figure 8. TQL Philosophies Used By CBUs



Question 10: What outside assistance/support has your organization received which facilitated your implementation process?

A key element for the successful implementation of TQL is adequate support. For CBUs, this means seeking assistance outside their organization. Survey question ten tried to identify the type and quantity of outside support CBUs were receiving and its source. Seven choices were given, these included; Training, Funding, Literature, Facilitating, TQL Assessment Visits, General Guidance, and Other. The responses varied greatly. No trend or similarities were established from this data other than the dominant source of support for CBUs were their host commands. The response to question ten is summarized in Table 2.

The lack of outside support is considered a serious pitfall in the implementation process. Basic resources such as training and funding must be readily available in order that CBUs can successfully implement

Table 2. Outside TQL Support

(Number of CBUs Receiving Support Expressed In Percentage)

Type of Support	Sources of Outside Support			
	Host Command	Brigade	Other	No Outside Support
Training	82%	10%	0	8%
Funding	36%	0	0	64%
Literature	27%	27%	10%	36%
Facilitating	27%	18%	0	55%
TQL Assessment Visits	10%	0	0	90%
Guidance	27%	18%	0	55%

this new leadership approach. Outside commands can provide valuable new ideas which can save time and facilitate the implementation process. The implementation guide provided in this thesis will be of little help without the adequate resources and required support essential for implementation.

Question 11: What barriers did your organization face when implementing TQL?

The need to identify barriers is important in evaluating the TQL implementation process and developing a sound implementation guide. Question eleven sought to identify major implementation barriers experienced CBUs. The respondents were given six common barriers to choose from, these included: Lack of Funding, Resistance to Change, Excessive Workload, Rushing Into TQL, Doing It Alone, Lack of Support From Management. The respondents were also given the opportunity to list other barriers and provide comments.

The responses varied greatly, however two barriers were prevalent; "Resistance To Change" and "Doing It Alone". It was no surprise that "Resistance To Change" was selected since it is an inherent barrier to most organizations undergoing a change in management style (Berry 1991). "Doing It Alone" was no surprise since it is supported by question eight which clearly demonstrated a lack of outside support. Table 3 summarizes the results to question eleven.

Question 12: Where have you applied TQL?

The degree in which TQL is applied will determine the overall effectiveness the new philosophy will have on the organization. For TQL to function as it is designed it must be all encompassing (Juran 1989). An

Table 3. Implementation Barriers

Number Of CBUs Facing Barrier	Common Barriers
3	Lack of Funding
6	Resistance to Change
3	Excessive Workload
4	Rushing Into TQL
6	Trying To Do It Alone
0	No Support From Above
1	Other

organization-wide application of TQL was not anticipated for those CBUs in the early to mid phases. In view that most of the CBUs were in the early phases, its segmented application of TQL was no surprise.

Question twelve tried to identify the areas where CBUs were applying TQL. The survey provided nine major operational areas to choose from, these included:

* Project Planning
* Equipment Maintenance
* Material Supply
* Safety
* Construction
* Quality Control
* Customer Service

* Military Matters

* Administration

The results were surprising in that most CBUs were applying TQL to their most active "operational areas". This was peculiar since these areas involve the largest number of personnel, require the most training, and are considered the most time consuming. Table 4 provides the results to question twelve.

Question 13: Has your organization developed methods for measuring performance and/or quality?

This question tried to determine if CBUs had developed methods for measuring quality and/or performance. Three measuring methods were

Table 4. Application of TQL

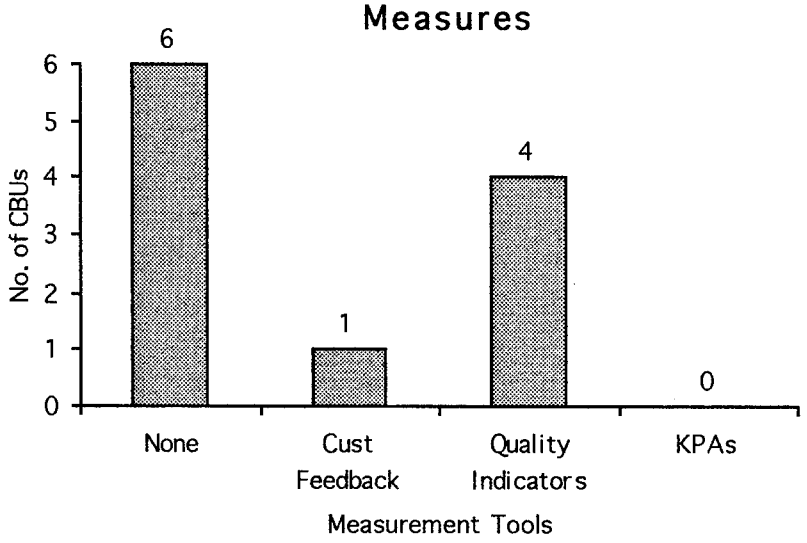
Number of CBUs Applying TQL	Area of Application
9	Project Planning
5	Equipment Maintenance
8	Supply
3	Safety
7	Construction
2	Quality Control
4	Customer Service
2	Military Matters
6	Administration
3	Other Areas

provided, these included; Quality Indicators, Key Performance Areas (KPAs), and Customer Feedback Forms. Key Performance Areas are areas where good performance is critical for the overall success of the CBU. Quality Indicators are means of measuring performance in these key areas. For example, the number of customer warranty claims can be an indicator of how well a project was constructed. Customer Feedback Forms are traditional questionnaires given to customers after a service is provided to determine degree of satisfaction.

The ability of an organization to accurately measure their performance and quality requires time. Among other things, the organization must perform internal assessments, identify processes, establish baselines, identify services and products, etc.. As expected, very few CBUs had developed measurement indicators. Those few who did, resorted to basic customer feedback forms which fail to address key performance areas. It was interesting to note that of the five CBUs who had established some means of measuring performance, three were in the early stages of Phase I implementation.

The importance of measuring performance and quality within an organization cannot be overemphasized. An organization must develop measuring tools to determine their successes and setbacks and make the necessary adjustments. This is accomplished through proper utilization of performance/quality measuring procedures which will be discussed later. The results to question thirteen is summarized in Figure 9.

Figure 9. Utilization of Performance Measures



Question 14: Have you "benchmarked" other organizations' successes?

The TQL philosophy stresses the importance of "benchmarking" as a means of improving performance and quality. Benchmarking is the process of improving organizational performance by adopting successful methods used by other organizations. Military organizations are considered to have strong opportunities for benchmarking due to the constant turnover of personnel and periodic association with other military organizations. This is especially true for CBUs who are members of a tightly knit community. The CBU Annual Conference which brings CBU OICs and AOICs together is a tremendous opportunity for information exchange and benchmarking efforts.

Benchmarking can be performed during any phase of the implementation process and can be most beneficial during the early phase where guidance is greatly needed (Fellers 1992). Ten of the eleven CBUs

surveyed indicated no benchmarking effort. This valuable source of guidance is clearly being untapped by the CBUs. The reason may stem from the traditional management style where competitive managers keep new ideas to themselves.

The survey explicitly defined "benchmarking", however based on some responses, it appeared CBUs were unfamiliar with its meaning. It is possible some benchmarking efforts may have not been identified due to this lack of understanding.

Question 15: What TQL training has your organization received?

Providing adequate training to the right personnel at the right time is critical for the successful implementation of TQL (FQI 1992). Many organizations fail to properly adopt TQL simply because they fail to understand the basic philosophy, proper training can prevent this. Question fifteen identifies the type and amount of TQL training each CBU received. Most CBUs received the TQL introductory courses. This is attributed to the Chief of Naval Operation's TQL directive. A great deal of the training was being provide to upper management. Considering most CBUs were in the early stages of implementation, it is logical that management be educated first. Table 5 summarizes the results of question fifteen.

Question 16: Do you think TQL has significantly improved your organization's performance and quality of work?
Question 17: What organizational problems can you attribute to TQL?

These questions were designed to identify the pros and cons of TQL based on personal experience of the OIC. OICs who had adopted or were in the process of adopting TQL, cited numerous improvements or potential

Table 5. TQL Training

(No. of CBU Personnel Receiving Training Expressed in Percentage)

TQL Training	OIC	AOIC	Operations Chief	E5-6	E1-2
Intro To TQL	82%	73%	73%	73%	36%
TQL Fundamental	64%	64%	64%	55%	10%
TQL Team Skills	18%	0	0	18%	0
Methods for Managing Quality	10%	10%	10%	10%	0
Senior Leadership Seminar	36%	27%	0	0	0

improvements to the organization while those few who had not adopted it, felt they could gain little benefits from TQL. These are the personal opinions of the OIC and do not reflect the attitude of the entire organization. These results are summarized in Table 6.

Question 18: (OIC Survey) What suggestions or lessons learned can you provide which could improve the TQL implementation process for other CBUs?

Question 3: (AOIC Survey) What suggestions or lessons learned can you provide which could improve the TQL implementation process for other CBUs

Question eighteen from the OIC survey and question three from the AOIC survey solicited personal recommendations and lessons learned for implementing TQL in CBUs. The AOICs provided little input compared to OICs. This is attributed to the AOICs skepticism towards TQL. Recommendations were geared primarily towards training and funding. This was expected as most CBUs were in the early phase of implementation. Table 7 summarizes the results of question eighteen and three.

Table 6. Benefits/Drawbacks Attributed to TQL

OIC Response To Question 16	Frequency
Has Had Positive Impact On Organization	4
No Significant Improvement Noted	1
Too Early To Tell	6
No Comment	0

OIC Response To Question 17	Frequency
Requires Too Much Training	1
No Negative Impact to Organization Noted	7
Tough To Implement	1
No Comment	2

Question 19: (OIC Survey) Based on what you know about TQL, what is your personal opinion of it's use in CBUs?
Question 4: (AOIC Survey) Based on what you know about TQL, what is your personal opinion of it's use in CBUs?

Question nineteen from the OIC survey and four from the AOIC survey tried to solicit personal opinions of both the AOIC and OIC about the use of TQL in CBUs. All OICs were in favor of TQL and felt it was well worth the effort. They felt TQL should be tailored to the needs of each CBU and should not be applied in a "cook-book" fashion. The OICs clearly indicated that TQL, with all its benefits was no substitute for good leadership and common sense.

Table 7. Implementation Recommendations From OIC/AOIC

Recommendations	Frequency
Educate/Train From Top Down	3
Be Very Patient, Don't Expect Fast Results	2
Seek Guidance From Above	1
Consolidate TQL Training From Brigade	1
Training Must Be Backed With Funds And Support From Above	1
Don't Force TQL On Workers, Give Them Guidance And Let Them Run With It	1
Don't Use TQL Jargon, Use Seabee Jargon	1
Too Early To Tell	1
No Comment	1

The AOICs on the other hand were sending a different message. They felt the Total Quality Leadership was "old news". They viewed TQL as simply good leadership and management practices which have been part of the Navy for years but recently they were given a different name. They felt that Seabees have always been applying TQL but it was never publicized or "complicated" as it is today. The AOICs agreed that improving quality and performance was important, however they felt that traditional methods used by Seabees have proven most effective.

This contrast in perception between the AOIC and OIC is viewed as potentially the biggest barrier the CBU implementation process is facing.

These results confirm question 11 results where "resistance to change" was considered one of the dominant implementation barriers. TQL is destined to fail in an organization in which management is not fully supportive of TQL (Varian 1990).

This difference in outlook is perceived to be caused by the difference in background and experience between the OIC and AOIC. The AOIC, unlike the OIC has probably gone through many "short-lived" management changes throughout his career and now views TQL no differently. Results to question nineteen and four are provided in Table 8 and 9.

Table 8. AOIC Opinions Towards TQL In CBUs

AOIC Response	Frequency
TQL Has Been Blown Up To Be More Than What It Really Is	1
No Organizational Improvement Noticed, CBU Too Small To Implement TQL	1
Seabees Have Been Using TQL All Along	4
TQL Is Doomed For Failure Due To Continued Inspections, Ranking Of Personnel, And Lack Of Support From Above	1
Existing Workload Does Not Allow Time To Gather Data, Analyze Processes, Charter Teams, Etc.	3
Cannot Apply TQL To All Situations In CBU, It's Partially Applicable	1
TQL Is Good For Junior Officers Not For All Hands	1
It Works Great Here, However We Are Careful Not To let It Replace Our Chain Of Command	1
Decisions Always Have To Be Made Up Top, Not By The Entire Organization As TQL Preaches. This Is What Officers And Chiefs Are Required To Do	2

Table 9. OIC Opinions Towards TQL In CBUs

OIC Response	Frequency
Extremely Valuable Philosophy, We Have Partially Applied It And Noticed Significant Improvements	1
Greatest Thing Since Slice Bread, TQL Is Improving Our Organization Ten-Fold	2
TQL Is No Substitute To Good Basic Leadership	1
Seabees have Been Using This Philosophy For Years Without Calling It TQL	1
Appears To Be Good Philosophy, Need More Guidance	3
TQL Will Not Succeed In CBUs Due To The Lack Of Resources	1
No Comment	1

5. CONCLUSIONS AND RECOMMENDATIONS

Based on research performed by the Construction Industry Institute (CII), Total Quality Management has proven to be a potentially effective management tool in the construction industry. It will improve quality and performance while reducing costs and construction time.

It is fair to assume that these benefits could also be obtained by CBUs who are similar to small contractors.

Many believe that smaller organizations can implement TQL more effectively than larger organizations (UT 1995). This thesis supports this belief. Implementation advantages which are evident in CBUs include, the ease with which the TQL philosophy can be presented to the workforce, the "direct contact" management has with its workforce, the ease with which interdepartmental teams can be formed, CBU personnel working closely together will improve worker participation and involvement, etc.. The CBU mission, its organizational structure, and size lends itself to the application of TQL in every respect.

Research data has led the author to conclude that CBUs are making an honest and effective effort to implement TQL within their organizations. The survey data indicates that most CBUs have taken the most important step towards implementing TQL, training their personnel and improving organizational awareness. The survey results indicate that the primary motive for adopting TQL was to improve CBU performance. The author has concluded that improving performance may be the goals of most CBUs, however the real motivation has been the Chief of Naval Operation's directive requiring Navy organizations to adopt the TQL philosophy.

5.1 Specific Conclusions and Recommendations

Conclusion: TQL Implementation is Hard Work For CBUs!

TQL requires time and patience and a complete change of thinking (Carr and Littman 1990). This is extremely challenging for CBUs who are action oriented and are accustomed to quick and tangible results. In addition to their "contingency" type mentality, CBUs are faced with the constant rotation of personnel. This constant change in leadership creates constant training and orientation demands as well as a lack of continuity.

Recommendation: Training and education is the key to preparing an organization for the hardships of implementing TQL. Training should be tailored to meet the unique needs of CBUs. Training should be consistent among CBUs so that rotating personnel have little difficulty blending into their new TQL environment. Training should address the difficulties of implementation and provide means for overcoming these hurdles.

Conclusion: No "Buy-In" From CBU Senior Enlisted.

Most AOICs view TQL as a new name to an old management/leadership style. They firmly believe that Seabees have been practicing TQL for years. This perception is most likely due to a lack of training, understanding, and to a certain extent rejection of previous leadership "fads". This lack of "buy in" is considered the biggest obstacle to the CBU implementation process.

AOICs have the strongest influence in the CBU organization. The workforce consists of young and impressionable junior enlisted personnel who look at senior enlisted Seabees as role models. The lack of commitment and support by senior enlisted personnel, especially the AOIC, is difficult to

hide and will undoubtedly set the pace for the entire organization, clearly interfering with the TQL transition.

Recommendation: Specialized TQL training should be provided to senior enlisted personnel by senior enlisted personnel. The trainers need to be strong supporters of the TQL philosophy and capable of conveying their commitment. Emphasis shall be placed on individuals understanding the basic concept of TQL. Real life success stories which senior enlisted Petty Officers can relate to shall be used to highlight the benefits of TQL. Training should emphasize the differences between current management styles and TQL. It should stress the difference between "common sense" and TQL. Lastly, the OIC must set the example for senior enlisted Petty Officers who will closely watched and scrutinized his actions. The OIC must demonstrate a sincere commitment to the TQL philosophy and its ideals.

Conclusion: Outside Support Lacking.

There is no clearly defined source of outside guidance, assessment, or motivation which CBUs can rely on during their implementation process. CBUs can go so far and do so much on their own. Survey data indicates few sources of outside support however, it does not reflect the efforts made my CBUs to seek outside assistance. The author concludes that little effort is being made by CBUs due to the existing lack of direction and funding.

Recommendation: CBUs should make every effort to identify and integrate themselves into existing TQL programs within their host command. In most cases this will provide access to critical training, literature, facilitators, and most importantly participation in the station's TQL initiative. The CBU shall "advertise" their implementation efforts and

their desire to benchmark and seek outside assistance. The Naval Construction Brigades should continue their efforts to provide CBUs the guidance and financial support necessary to implement TQL.

The Brigades should try to work together to standardize their TQL support in order to maintain a level of consistency between east and west coast CBUs. The annual CBU Conference is a good avenue for CBUs to express their "support" needs and desires. In order to effectively identify the needs of each CBU the Brigades should evaluate the TQL process during their annual assist visit.

Conclusion: Cultural Change Is Not Evident.

Evaluation of surveys and discussions with CBU AOICs and OICs demonstrated little cultural change. Although some management personnel demonstrated an understanding of the TQL philosophy, the necessary change in behavior and outlook was not evident. For example, the concept of empowerment, process evaluation, driving out fear, or continuous improvement was not portrayed.

Recommendation: Cultural change is a very difficult process which requires strong leadership and a deep understanding of how management practices and behaviors affect this change (Varian 1990). A CBU must first "bring up to speed" the OIC and all senior enlisted personnel by ensuring they are well trained, understand the TQL philosophy, and are totally committed. Management must be strong leaders, not strong armed; they must focus on personal behavior first, than attitude. They must be able to provide reasons, logic, and justification for change in order to achieve acceptance by the CBU.

Conclusion: Lack of Priority.

The excessive amount of time which most CBUs have taken to reach the first implementation phase (average eighteen months) reveals a possible lack of priority within the organization. In view of the significant effort required to properly implement TQL, it is imperative that CBUs place the 'highest possible' priority to this initiative. Accordingly, the Commanding Officer must support this level of priority.

It is quite easy for an organization to delay TQL training, TQL meetings, pilot projects, etc. for other pressing matters. Once committed to the TQL effort the CBU must continue without interruption. TQL is not a management program with a beginning and an end, it is a new work philosophy. It is clear that TQL consumes much time and effort but it should be viewed as an investment which will streamline existing work processes, improve quality, and eventually generate more free time and improve performance.

Recommendation: CBU mission priorities are usually set by the Commanding Officer and the Brigade. A CBU seriously seeking to implement TQL must be willing to treat the quality effort as a high priority. The CBU shall discuss their intent with the Commanding Officer and Brigade and seek their support and approval. The CO and Brigade must be made aware of the importance and the priority the CBU has placed on this effort and realize there will be conflicts between "nice to have projects" and TQL requirements.

Conclusion: Insufficient TQL Training.

Survey results indicated that most of the TQL training being received by the CBUs is theoretical and involves basic concepts.

Recommendation: Unless management and the workforce posses the problem solving, team building, and interpersonal skills that are necessary for implementation, TQL is doomed for failure. Training shall not dwell on theory alone. Training needs shall be tailored to the needs of the CBU. It shall concentrate on developing, managing, and motivating human resources. Management shall carefully select training courses and trainees with input from the organization.

Conclusion: Full-Time TQL Coordinator Lacking.

A TQL coordinator is critical to a successful implementation process. This individual is responsible for coordinating training, monitoring and evaluating the implementation process, keeping management abreast of progress; and most importantly ensuring TQL is being applied throughout the organization. Most CBUs interviewed identified their TQL Coordinator was a collateral duty. The need for someone to keep the implementation process on track cannot be overemphasized.

Recommendation: The OIC and AOIC shall hand pick a full time TQL Coordinator early in the implementation process. The individual should have sufficient seniority to understand the organization, be a good performer, believe in and support TQL, and have the authority to answer directly to the OIC and AOIC. The coordinator shall be a team player and a role model for others to follow. The coordinator should be appointed early in his tour to provide the CBU highest degree of continuity.

6. TQL IMPLEMENTATION GUIDE

This chapter provides a guide for implementing TQL in Naval Construction Battalions. The implementation methodology is based on survey data results, personal interviews with CBUs and Naval Construction Brigade representatives, past experience as a former CBU Officer In Charge, research performed by the Construction Industry Institute (CII) and Federal Quality Institute, and information provided by the TQM Graduate Course CE 395U of the University of Texas.

The TQL implementation process shall be tailored to the mission and the demands of each CBU. The purpose of this chapter is to provide implementation guidance, but it should not be interpreted as "step-by-step" instruction. This guide is designed for CBUs who have not implemented TQL or are in the early to mid implementation phases. Based on the survey results, this constitutes over 90% of all CBUs surveyed.

The five phases of the implementation model are (1) Motivation and Commitment, (2) Exploration, (3) Planning and Preparation, (4) Implementation, and (5) Sustainment (Burati and Oswald 1992). This implementation model was tailored to meet the needs of the CBU organization by modifying standard implementation procedures.

6.1 Motivation and Commitment

Total Quality Leadership is a new way for CBU organizations to do business. Since the methods by which an organization conducts its business are clearly the prerogative of top management, it is top management who must be convinced of the merits of TQL. Top

management's recognition of the need for improvement and its commitment to learn more is the first step towards implementation.

Leadership is essential during every phase in the development of the CBUs quality leadership program. It is particularly vital at the initial stages of implementation. In fact, indifference and lack of involvement by top managers are frequently cited as the principal reasons for the failure of TQL improvement efforts (Deming 1986).

To be successfully implemented, quality leadership requires not only the vision, planning, and active involvement of top management, it also requires their practical support through provision of necessary resources; time, money, and personnel. Delegating responsibilities and providing pep-talks are insufficient to motivate the workforce to accept TQL changes.

Management must be trained on how CBU organizations can be enhanced by quality leadership. They must learn the basic philosophy, principles, and practices involved in making their organization's policy one that focuses on quality leadership. They must enthusiastically participate in changing the CBUs culture. Without top management's active participation as the "champions" of quality leadership, the organization will not obtain the full scope of possible benefits. Table 10 identifies some of the culture changes that top management needs to understand and address to achieve improved quality (Fellers 1982).

6.2 Exploration

A key step in the quality leadership process is exploring and investigating the various TQL approaches and selecting the best one for the

Table 10. Quality Leadership Cultural Changes

Category	Previous State	New Culture
Customer Requirements	Ambiguous understanding of customer requirements	Systematic approach to seek out, understand, and satisfy internal and external customers
Suppliers	Unidirectional relationship	Partnership
Objectives	Orientation towards short-term objectives	Balance long-term goals with successive short-term objectives
Improvement	Acceptance of process variability	Understand and continually improve the process
Problem Solving	Unstructured individualistic problem solving and decision making	Participatory and interdisciplinary problem solving based on data
Leadership Style	Leadership style with uncertain objectives, which instills fear of failure	Open style with clear and concise objectives, which encourages continuos improvement
Role Of Manager	Plan, organize, assign, control, and enforce	Communicate, consult, delegate, coach, mentor, remove barriers, and establish trust
Measurement	Data gathering for problem identification	Data used to understand and continuously improve processes
Rewards and Recognition	Based on individual output, few team incentives	Individual and group recognition and rewards, negotiated criteria

organization. In order to accomplish this there must be an understanding among mangers regarding how they want the organization to look like in the future and what principles will allow them to achieve their desired goal. These agreements will become the basis for selecting the best TQL approach and the basis for formal statements of the organization's vision, mission, and guiding principles.

In the private sector the construction industry has been known to adopt the Crosby approach as the primary quality philosophy. The reasons given for selecting Crosby are that his approach is tailored to attract management's attention and is easier to implement and more suited to the construction industry than others (UT 1995). The Navy selected Dr. Deming's philosophy because of his concepts of continual improvement and because his approach is more of a philosophy than a program (Koslowski 1995). One important factor should be considered when evaluating TQL philosophies, all approaches are geared for the manufacturing industry and if they are to be successfully implemented in CBUs they must be altered to compensate for differences between the two. Differences between military and civilian organizations as well as public and private work shall also be considered. An exception to this is the Navy's version of Dr. Deming's philosophy which has been modified to meet the Navy's needs.

The vision and mission are clear, positive, and forceful statements describing the CBU's mission and where it wants to be in two or three years. It is expressed in simple, specific terms. The vision and mission allows the CBU to aim for higher goals. The vision must be powerful enough to motivate personnel and show them the way things can be. The guiding principles will "show" the organization how to achieve their vision and how to meet their mission (Fellers 1992). These statements shall be developed by key management personnel within the organization. These should include the OIC, AOIC, Operations Chief, Admin, Supply, Safety, Q.C., and Training representatives. Guidance for developing these

statements is provided in Appendix D. Whatever form of the vision, mission, and guiding principles take they must be communicated throughout the organization frequently and with conviction. Examples of CBU mission, vision, and guiding principle statements is provided in Appendix F, G, and H.

6.3 Planning and Preparation

This phase provides a roadmap for TQL implementation. This phase becomes critical in organizations which undergo constant change in personnel as do the CBUs. Table 11 illustrates the quality leadership planning steps.

Table 11: Quality Leadership Planning Process

Sequence	*Planning Process*
Step 1	Establish A Quality Council
Step 2	Identify Customer Needs
Step 3	Develop A Quality Strategy
Step 4	Select Groups To Implement TQL
Step 5	Conduct Training-Needs Analysis
Step 6	Conduct Training
Step 7	Identify Implementation Resources
Step 8	Identify Performance Measures

The planning and preparation must be well documented with sufficient detail and clarity so as for new management staff to easily pick up where

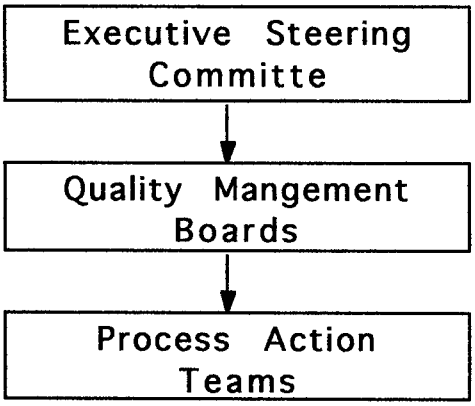
the other left off. The planning of the implementation process shall be developed by the Quality Leadership organization. It shall be scheduled as a continuous evolution which incorporates the entire organization. The planning schedule shall take into account mission requirements and current and future workloads of the CBU. Prior to finalizing the schedule it should be evaluated by an outside source such as the station's TQL Coordinator and approved by the Commanding Officer. The following section will describe the planning and preparations steps in detail.

6.3.1 Establish a Quality Council: Developing an organizational structure that will institute, sustain, and facilitate expansion of the quality improvement effort is an essential element and the first logical step in the planning and preparation phase. The quality council is responsible for launching, coordinating, and overseeing the quality leadership improvement effort. It is the vehicle for focusing the energy and resources of the CBU organization toward one common goal, continuous improvement of the services the CBU provides its customers (Ishikawa 1985). Successful quality councils shall be tailored to accommodate the CBU's unique mission, culture, and approach for improving quality. This tailoring will account for some differences in the way the CBU sets up their the quality leadership organization.

Navy organizations that have successfully introduced the quality leadership approach have formed a quality council of top managers during the early stages of implementation (Koslowski 1995). This team is sometimes called the Executive Steering Committee (ESC), Executive Steering Group (ESG), or Executive Quality Council (EQC). By establishing a

quality council, top management provides structure, and legitimacy to the quality leadership improvement effort. It is the first indication that top management has recognize the need to improve and has begun to change the way the organization conducts business. The direction this change will take becomes clear when the quality council publishes its vision, mission, and guiding principles. The quality council should be chaired by the OIC and include the AOIC, and CBU division representatives. An example of a typical quality leadership structure is depicted in Figure 10.

Figure 10: Quality Structure Council



This structure maximizes worker involvement at all levels. The Executive Steering Committee (ESC), at the top of the structure, provides leadership and direction for the CBU. At the next level, the Quality Management Boards (QMB) work on the organization's targets established by the ESC. To ensure communication between these two groups, members of the ESC act as sponsors and downward links on each QMB. Below the QMBs are the process action teams (PATs), designated by the QMB to carry

out specific tasks. When the task is completed, the PAT is disbanded. Members from each QMB act as sponsors or downward links for the PATs in the same manner as the ESC members. Because every team is composed of personnel from different levels and different divisions, this structure promotes cooperation across the organization.

Early in the planning phase the ESC should designate a full-time TQL coordinator which will be responsible for coordinating training, implementation, and provide feedback directly to the ESC. This individual shall be hand picked and capable of carrying out these responsibilities.

6.3.2 Identify Customer Needs: Quality means that the CBU is meeting its customers' expectations. Customers can be workers (internal customers) or end users (external customers). Expectations are the customers needs and wants. Meeting customer expectations through application of quality leadership principles is the key to improving performance.

The CBU must identify all it's customers and take appropriate feedback measurements. It is highly recommended that the OIC and AOIC personally visit CBU customers to discuss the level of service the CBU is providing and to identify customer expectations. The objective is to determine how the CBU's output conforms with the customer requirements.

A similar approach should be followed with suppliers. The CBU should meet, with the Supply Department and Public Works (suppliers of material and work) and provide them input on their level of performance based on CBU expectations. The objective should be to develop a partnership between CBU, suppliers and customers in which all strive for a

common goal. To evaluate the needs of the CBU's internal customers, periodic "OIC Calls" should be held. OIC Calls are closed door meetings between the OIC and separate tiers of the workforce. This is an opportunity for the personnel to express their concerns directly to the OIC with a certain degree of anonymity. These gatherings should not be discarded as another meeting but they are a means of evaluating and improving morale and meeting the needs of the workforce.

6.3.3 Develop Quality Strategy: There is no one right way to implement quality leadership in an organization, no guaranteed recipe for success. The process proposed by this thesis is a synthesis of approaches used successfully by numerous organizations, military and civilian. It is offered only as a guide in developing strategies and associated plans to carry out these strategies. The intent of a flexible approach is to capitalize on the organization's strong points and allow energy to be focused on key improvement opportunities.

Because the missions, cultures, and management styles of CBUs vary, it would be inadvisable to attempt to develop one ideal plan or organizational structure for implementing quality leadership. Furthermore, it would be useless to impose the experience of one organization entirely onto another, without tailoring it to meet the unique needs of that second organization.

The best plans are those that result in action, action that improves the processes of the organization and results in better services and products for the customer. A simple plan that generates action and gets

results rather than a comprehensive plan that collects dust. Some initial quality leadership strategic actions should include the following (FQI 1990):

* Create a team to review the quality leadership approach, assess the organization, and define a unique strategy.
* Conduct customer surveys and identify benchmarks.
* Create quality teams to address specific CBU operating problems (based on assessment, outlined in section 6.4.4).
* Define the CBU's unique quality leadership problem-solving process.
* Identify CBU work processes

These quality initiatives will discussed in detail later in this chapter.

6.3.4 Select Organizations To Implement Quality Leadership: At the outset of a quality improvement effort, most organizations implement quality leadership either through the entire organization or partially applied on one or more pilot projects. It is also possible to tailor a combination of the two approaches to fit particular circumstances. In any case, each organization must make the decision after realistically assessing a number of factors including the following:

* The size and complexity of the organization
* The ability of the organization to change
* The resources (time, money, and people) that can be allocated to introduce and sustain the effort.
* The level and intensity of support for quality management throughout the organization

Implementing quality leadership on a broad scale across a large organization is a major undertaking. It requires significant allocations of time, money, and people, and for most organizations, requires substantive

operational and cultural changes. The larger the organization, the more massive the change (Berry 1991). CBUs however, are relatively small and ideally suited for broad-scale implementation. Partial implementation of TQL in CBUs is strongly discouraged. It will prolong the implementation process, not bear potential benefits, and eventually lead to loss of faith and commitment of personnel.

Some advantages to broad-scale implementation are as follows:

* It promotes consistent implementation. Each organizational element uses the same quality management philosophy, language, and training and is guided by the same vision and core principles.

* It demonstrates strong commitment at the very top level of the organization. This can facilitate the removal of barriers between organizations.

* The quality leadership organizational structure can be cascaded throughout an organization, providing linkage between the OIC, AOIC and operating divisions for improved communications.

* It provides economies of scale (such as when procuring consultant services or developing in-house training support). For example a large training contract is generally less expensive per person than series of smaller contracts.

6.3.5 Conduct Training Needs Analysis: The self-assessment performed by the quality strategy, Section 6.3.3, shall provide a baseline analysis that can be used to identify when and where the CBU needs TQL training. The assessment shall look at CBU personnel training records, it shall identify individuals who are in need of training based on their training background and its role in the overall quality improvement process. It shall identify the type of training best suited for the organization based on its vision and mission, and it shall prioritize training for management first.

6.3.6 Conduct Training: Training is essential to the success of the quality leadership initiative. During the early stages of implementing quality leadership, attention should be given to developing a detailed plan for training. In addition to providing training on specific quality leadership principles and practices such as statistical quality control, continuous process improvement, benchmarking, use of data, and process analysis, most CBUs will also need to cover such related areas as participatory management, group dynamics, and team building. The ideal training program will target the specific needs of CBU management, supervisors, and workforce. It will deliver training "just in time", meaning only as it is needed for smooth transition to the next step in the quality leadership effort.

Just-in-time training allows personnel to apply what they have learned soon after training has concluded. Trainees are more interested and willing to apply new concepts when the information is "fresh" in their minds. Many military personnel believe that training is a waste of time since most of it is never used. Often times this has proven to be true. The 'just in time" concept will ensure that personnel will be involved in training-related work prior to scheduling associated training.

All unit personnel must understand their roles in the organization and how their jobs will change. Such understanding goes beyond the instruction given in manuals or job descriptions. CBU personnel need to know where their work fits into the larger picture: how their work is influenced by workers who precede them and how their work influences workers who follow.

The CBU's training plan should be an outgrowth of it's unique quality leadership implementation strategy and should be directed to the organizational areas or projects where top management has focused the implementation effort in the first year (Johnson 1993). To prevent surprises and delays in implementation, the training plan must include reasonably accurate estimates of the schedule and required resources.

6.3.7 Identify Implementation Resources: The CBUs TQL plan must identify how the TQL effort will be funded, where the required time will come from, how it is to be accounted for, what division will provide what personnel, and what facilities will be used for quality leadership training, meetings, etc.. This part of the plan may be the hardest to develop because quality leadership will now be competing with other CBU requirements, especially those last-minute-must-have projects by the Commanding Officer. In reality, quality leadership is not competing for mission resources because if implemented properly it will be an integral part of the future CBU mission. This part of the plan may be the first big test of the CBU's commitment to quality leadership. Milestones for providing the identified resources should also be included in the plan.

6.3.8 Identify Performance Measures: Performance measures will determine the success of the CBU's quality improvement efforts. To measure the success of any quality initiative an organization must first identify areas for improvement, establish a baseline, and measure it's progress based on that baseline (Fellers 1992). CBUs must first identify "Key Performance Areas" (KPA), these are areas where effective performance is critical to achieve their mission and satisfy customers.

Existing organizational records should be carefully reviewed to establish baselines for KPAs. For example, if a CBU determines that completing construction projects on time is a Key Performance Area, it can look at project records and determine their current percent of on-time completion. Project completion periods has now become a "Key Performance Indicator" (KPI); it is the tool by which the organization measures their performance in this area.

The objective of every quality leadership program must be to identify performance indicators for its organization, and then continue to improve on these key measures of success (UT 1995). It is also important, to measure the success of the quality leadership process itself, and of the progress the CBU makes in implementing its quality improvement plan.

6.4 Implementation

To begin the implementation process the CBUs top leadership must make the decision to change its operations by implementing their quality leadership plan. They must examine how their services compare with those of other CBUs. This procedure is part of "benchmarking". It is a valuable tool in determining where change is needed. The CBU must then embed the "continuous improvement" concepts throughout the organization. This will represent a major change in how the organization operates from that point on. The need to "monitor and evaluate" the unit's progress in improving cannot be over emphasized. The monitoring process is an excellent means of measuring how the quality initiative is progressing. It will also inform the entire organization how they have

contributed to the improvement operation. As the CBU begins to "demonstrate success" and convince the doubters, the organization must also continue to learn from feedback. It must revise and "adjust it's quality leadership process" to meet the changing needs of the organization. Finally the CBU must continue to improve. This implementation process is illustrated in Table 12.

Table 12: Quality Leadership Implementation Process

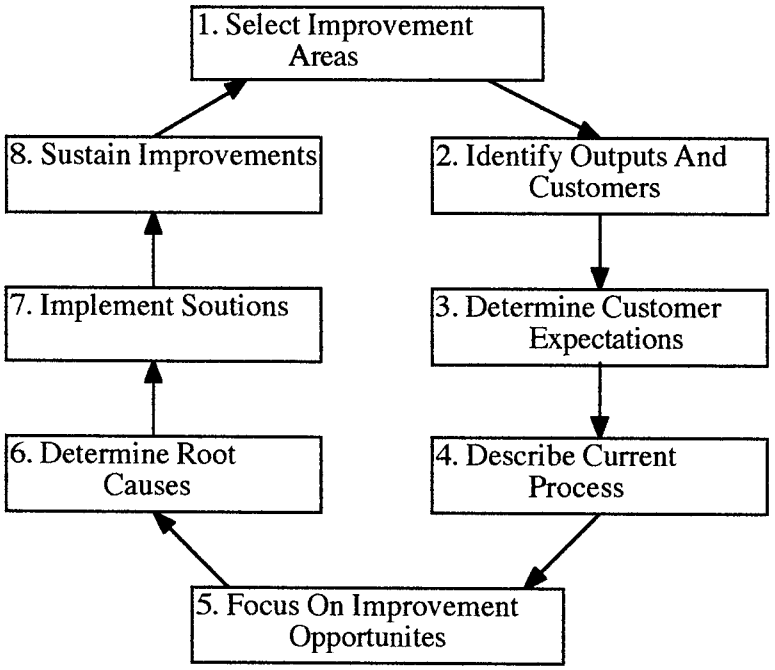
Sequence	*Implementation Process*
Step 1	Implement Quality Philosophy
Step 2	Benchmark
Step 3	Implement Continuous Process Improvement
Step 4	Monitor and Evaluate Results
Step 5	Recognize Success
Step 6	Adjust Quality Process
Step 7	Continue To Improve

The following section describes the quality implementation process in further detail:

6.4.1 Implement A Quality Leadership Philosophy: To implement a sound quality leadership philosophy management must apply an approach based on the plan-do-check-act (PDCA) cycle to each area of the quality improvement plan (Berry 1991). AT&T has developed a

systematic approach for identifying quality improvement opportunities and resolving an organization's process problems. It is shown in Figure 11. This model is based on the Plan-Do-Check-Act cycle.

Figure 11: Quality Leadership Improvement Cycle



The quality management improvement cycle, whether AT&Ts or the one the CBU creates, offers a common language and a problem-solving methodology for use throughout the organization. First, it facilitates communication among groups with similar interests. Second, it supports the basic quality value of managing by offering individuals and teams a disciplined problem solving approach. The cycle embodies several basic quality leadership theories and principles. It assures that managing by fact is accomplished through the use of the cycle. Third, the quality leadership improvement cycle increases the credibility of solutions that are developed in one part of

the organization, allowing them to be duplicated in other areas of the organization. Fourth, the cycle is important as a tool for managers who are responsible for quality improvement efforts in the organization. It provides a framework for reviewing the status of quality improvement projects. Finally, it can assist in tracking the effectiveness of solutions and permanently eliminating root causes of quality problems.

6.4.2 Benchmark: Benchmark is defined as a standard of excellence or achievement against which other similar things must be measured or judged. Simply speaking, benchmarking involves the following process (FQI 1991).

* Figuring out what to benchmark
* Finding out what the benchmark should be
* Determining how it's achieved
* Deciding to make changes or improvements to meet or exceed the benchmark

These four steps, while appearing simple, require thinking and analysis. They require that the CBU know its internal processes and practices in some detail.

The objective of benchmarking is change leading to improvement. Without change in processes, practices, and results, benchmarking is an incomplete exercise. If CBUs document and measure their work process, they will find benchmarking to be an extremely valuable (and not terribly difficult) process. On the other hand if the CBU wanders into a benchmarking project without understanding its own process, it will find

their lack of knowledge to be a barrier to successful benchmarking attempts.

6.4.3 Implement Continuous Process Improvement: Continuous process improvement addresses the creation of positive change in the way work is done. It includes the definition of work flow, strengthening of supplier-customer relationships, and elimination of efforts that do not add value to the CBUs services.

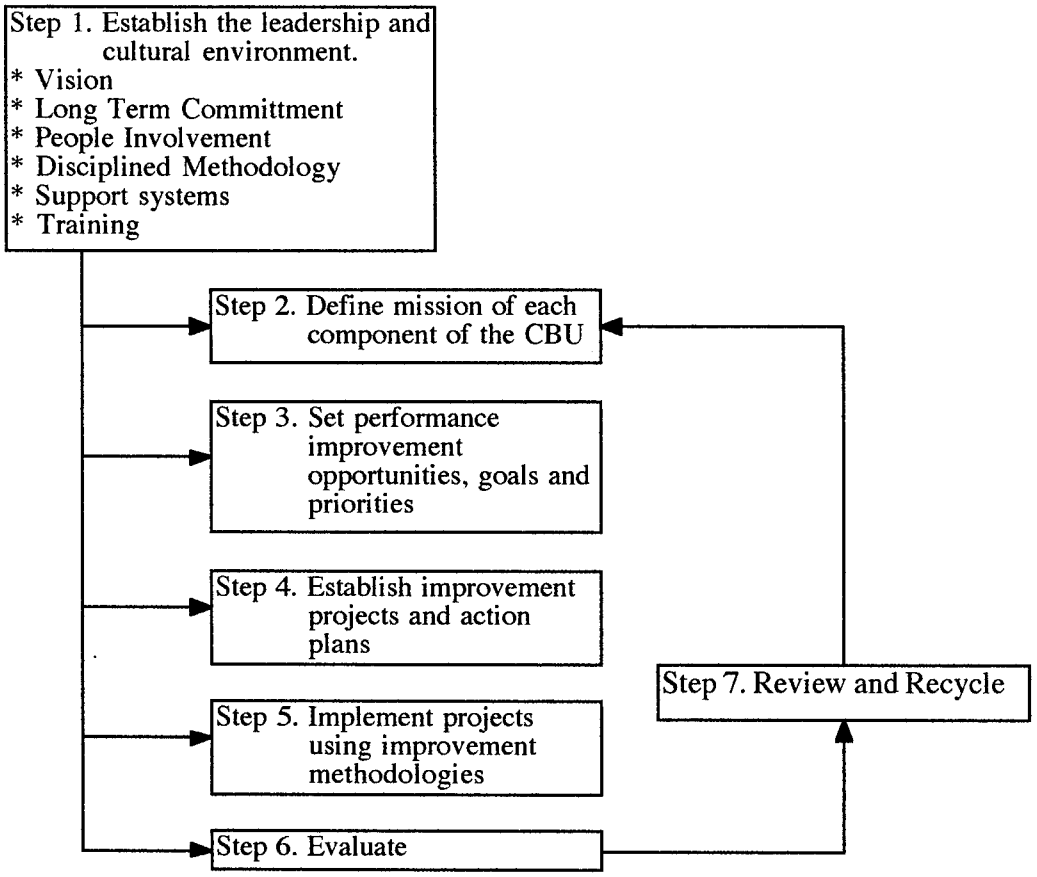
The quality management process improvement model shown in Figure 12 is a seven step process (Johnson 1993).

It begins with the activities needed to create an environment conductive to quality leadership and continues through selecting and improving a process, and finally moves to assessing the level of performance improvement, where the model cycles around to focus on the next process improvement effort. Here are the seven continuous process improvement steps.

Step 1. Set The Stage For Process Improvement

Setting the stage for process improvement involves everything the CBU does to become aware of the need for improvement and to establish a commitment to the continuous improvement process. It includes basic education and training, goal setting, barrier education, and leadership. Setting the stage means the CBU must create an environment in which continuous process improvement is encouraged and nourished. CBU management must have a clear vision of what it wants to accomplish and where it wants to go,

Figure 12. Continuous Improvement Strategy



and it must put in place a support system to help the improvement effort.

Step 2. Select A Process To Improve

The CBU must identify one process on which it will focus its improvement effort during each pass through the cycle. Selecting the improvement target involves identifying all the potential opportunities, setting priorities and choosing the process that presents the most serious problem or offers the

greatest opportunity for improvement. Once the process is selected, the CBU must identify its major problems and isolate their root causes.

Step 3. Define The Process

Once a process has been targeted for improvement, the CBU should define the process as clearly and completely as possible. Process definition involves determining the customers (both internal and external) and the suppliers of the process, documenting how the process is currently performed (usually through a flow chart or diagram), and identifying measures of process performance. A sound process definition provides a consistent base from which to begin process improvement; without knowing where you are at a given moment, it is hard to determine how to get to your destination.

Step 4. Standardize The Process

By standardizing a process, the CBU institutionalizes the current best way to perform the process. It creates a means for instructing personnel in their jobs with a consistent performance definition, provides a means for evaluating performance consistently, and provides a basis for evaluating the success of the improvement efforts. The CBU accomplishes this by following the standardize-do-check-act cycle, which requires the CBU to first bring its measurement system under control, next identify and document the current method of performing the process (which becomes the standard) and then communicate and promote use of

the standard. The CBU must ensure that individuals are trained to the standard, enable its use, and enforce that use (do). Once the standard is in force, the CBU can measure all process performance against that standard (check) and respond appropriately to deviations (act).

Step 5. Tighten The Process

Once the CBU has defined a process standard, it should tighten the process before actually attempting to improve it. This includes ensuring that the process meets its stated and perceived requirements, cleaning and straightening the process work areas, eliminating unnecessary equipment, instituting total, productive maintenance, establishing reliable, adequate data collection systems.

Step 6. Improve The Process

Efforts to improve the process should follow the classic plan-do-check-act (PDCA) cycle in which the CBU plans an improvement, implements solution (do), checks for improvement, and acts to institutionalize the improvements. The CBU's efforts involves developing solutions that address stated requirements and conform to theories on problem causes. Data collection and measurement methodologies must support the envisioned solution. Most importantly, the CBU must be trained in the techniques necessary to carry out the plan.

Step 7. Assess Improvement Performan

After an improvement has been implemented, the CBU should thoroughly document the improved performance and the successful improvement effort. That documentation allows others to benefit from the lessons the organization has learned and brings recognition to the CBU's efforts. It also provides a road map for replicating this effort.

The continuous process improvement effort will be unique in its details, however it should move the organization toward satisfying the following six main criteria (FQI 1990).

1. Exceeding customer requirements and expectations.
2. Believing in people, working to eliminate barriers that prevent people from taking joy, and pride in their work, and involving everyone.
3. Tapping the power of individuals, multiplying that power through training and teamwork, and focusing that power on understanding and process improvement.
4. Recognizing that most problems are in the organizations systems and are not due to particular individuals and circumstances, and providing leadership to continuously improve the systems.
5. Making decisions based on data rather than on opinions or emotions; stimulating creative thinking; and seeking innovation in processes, and services.
6. Focusing more on defect prevention than on defect detection (Seabee workers are best suited to prevent defects and should be the first level of inspection for finished activities).

6.4.4 Monitor And Evaluate Results: The CBU shall monitor and evaluate it's quality improvement results using performance measures discussed earlier. The organizational assessment is critical since it will identify vital performance areas which must be targeted for change. An

assessment helps to identify those vital processes to be targeted and provides a baseline measurement for judging progress (Ishikawa 1985). Assessments can take a variety of forms and frequently involve identifying and surveying the organization. The following questions should be considered when assessing the organization.

* What is the mission of the CBU? What services and products are provided?
* Who are the internal and external customers?
* What measurement systems are presently in place?
* Does the CBU measure its success in terms of meeting customer requirements?
* How well does the CBU communicate with its customers?
* How does the CBU generate ideas for improvement?
* What type of suggestion system is in place? Is it effective?
* What does the CBU reward? Individual performance, teamwork, quality improvement?
* To what extent is teamwork used, encouraged, and recognized?
* What is management's relationship with the workforce?
* What type of leadership style is employed? Is it directive or participative?
* How much discretion do personnel have in making decisions? Is it authority delegated to the lowest levels?
* What is the attitude toward training?
* What is the attitude toward TQL? Is the focus on quality of the end product or quality of the process?
* Are the organization's goals and objectives clearly stated and widely known?

6.4.5 Recognizing Success: The success of quality leadership is determined, in large part, by the degree of importance the CBU places on it. Recognition is one of the most important ways to reinforce a proactive, positive change in behavior as it relates to quality leadership. Recognition should be given for the successful application of the quality leadership principles and practices. The goal of the CBU is to create an environment in which change is encouraged and celebrated when it occurs. Recognition is a means to demonstrate respect and appreciation for all personnel and the value they add to the organization.

Traditionally the military has given rewards based on outstanding individual performance. Rewards have been based on quality "output", often given at the end of the individual's tour. To provide personnel effective reinforcement, recognition should emphasize the process not just the results. Awards should recognize teamwork, not only individual performance. It is the improvement of quality processes through teamwork that should be encouraged; therefore, that is what should be reinforced with praise.

6.4.6 Adjust Quality Leadership Process: The quality leadership planning and implementation efforts must not be carved in stone. As the CBU learns more about its strengths and weaknesses, it may have to change its quality leadership efforts to reflect its organization's feedback. If the results are not as expected, the CBU must develop a new approach for improvement, based on what they have learned.

6.5 Sustainment

Theoretically the sustainment phase begins when implementation of TQL ceases. This is by no means a clearly defined transition. There are numerous implementation phases with varying duration. There are however, indicators which can assist in determining the end of implementation. These include, a quality infrastructure in place, trained personnel in teams generating improvements, mission/vision/guiding principles complete, work processes defined, etc.. The following are key conditions which prevail in the sustaining phase (Burati and Oswald 1992);

Long Range Planning: As with any new leadership/management philosophy, once implemented there is the danger that it will gradually loose its identity and momentum. Management should make an honest effort to ensure that planning for continuous quality improvement will remain a high priority and be pursued with equal or more discipline than in the implementation process.

Process Improvements: With the quality infrastructure and training in place, CBU management shall concentrate on long term efforts to improve key working processes. Emphasis shall be placed on processes which generate the highest level of performance and customer service.

Internal Momentum: Management must never let down it's commitment to total quality leadership. This is difficult for CBUs who experience a constant turnover of personnel. It is up to management to ensure their replacements provide a continuous commitment to the effort. This requires visible signs of involvement, and continued support necessary to carry out the organizational commitment.

On-Going Participation: As the TQL culture matures there should be increasing levels of empowerment of lower management and the general workforce. They should take action in response to organizational problems and improvement opportunities. Participation and involvement by all CBU personnel should be encouraged to ensure a homogenous improvement effort.

Training: Training should be an on-going process which ensures newcomers understand the CBU's quality philosophy, the workforce shall receive the specialized training necessary to carry out quality improvements they are tasked with. Management must develop the quality leadership skills necessary to work with more advanced quality improvement tools.

Management Oversight: TQL will not run by itself. It must be monitored closely by management. The oversight process described in the implementation phase is an important part of ensuring the TQL effort is sustained.

Continue To Improve: Never stop!! The CBU must continue to improve every facet of the organization's operation.

APPENDICES

Appendix A. DR. DEMING'S FOURTEEN POINTS

Dr. Deming's Fourteen Obligations of Management

1. Create and publish to all employees a statement of the aims and purposes of the company or other organization. The management must demonstrate constantly their commitment to this statement.

2. Learn the new philosophy, top management and everybody.

3. Understand the purpose of inspection, for improvement of processes and reduction of cost.

4. End the practice of awarding business on the basis of price tag alone.

5. Improve constantly and forever the system of production and service.

6. Institute training (for skills)

7. Teach and institute leadership

8. Drive out fear. Create trust. Create a climate for innovation.

9. Optimize toward the aims and purposes of the company the efforts of teams, groups, staff areas, too.

10. Eliminate exhortations for the work force.

11. a) Eliminate numerical quotas for production. Instead, learn and institute methods for improvement.
    b) Eliminate MBO (Management By Objective). Instead. learn the capabilities of processes, and how to improve them.

12. Remove barriers that rob people of pride of workmanship.

13. Encourage education and self-improvement for everyone.

14. Take action to accomplish the transformation.

Appendix B. TQL Survey Solicitation Letter

21 June 95

Commanding Officer
NROTC Unit, University of Texas
Austin, Tx 78712

Officer In Charge
Naval Construction Battalion Unit 408
63 Chandler Street
Newport, RI 02841 - 1706

LT Wright,

I am a graduate student at the University of Texas at Austin in the Department of Civil Engineering. I am currently working on my thesis which is titled "Implementation of Total Quality Leadership in Naval Construction Battalion Units". The purpose of my thesis is to identify the implementation process of Total Quality Leadership (TQL) in Construction Battalion Units (CBUs) and to develop a generic TQL implementation plan for CBUs.

Enclosed are two surveys which are to be completed by the OIC and AOIC. The surveys are designed to identify the implementation process and current status of TQL within your organization. I have tried to make the questions as short and simple as possible while addressing key issues. If questions do not apply to your organization, please leave them blank. The intent of the survey is to identify trends and overall TQL implementation status of CBUs, not to evaluate specific performance. Your survey response will remain anonymous.

Your assistance in completing and returning the enclosed surveys as soon as possible is greatly appreciated. Please use the returned stamped envelopes or facsimile. If there are any questions please call me. Phone: (512) 349 2651, Fax: (512) 349 2643

Respectfully,

A. Crusellas
LT, CEC, USN

Appendix C. Officer In Charge Survey

TOTAL QUALITY LEADERSHIP

SURVEY

CONSTRUCTION BATTALION UNIT

_____

(Officer In Charge)

1. Has your organization adopted the Total Quality Leadership (TQL) philosophy?

   Yes ____ No ____ In Progress ____

   (If response is "no" go to question 19)

   Note: TQL is defined as a "complete leadership and management philosophy that permeates every aspect of an organization and places quality as a strategic issue". TQL focuses on process improvement, customer involvement, teamwork, and training and education in an effort to achieve customer satisfaction, cost effectiveness, and defect free work.

2. What TQL phase is your organization currently in?

   Phase: I____ II____ III____ IV____

   (Check more than one if applicable)

   None Of The Above (informally applied) ____

   Phase I. Exploration and Commitment: identify need for change, seek outside assistance, train upper chain of command, etc.
   Phase II. Planning and Preparation: develop implementation plan, identify TQL responsibilities within organization, expand training to worker level, identify improvement opportunities, etc.
   Phase III. Implementation: charter quality improvement teams, monitor TQL process within organization, execute improvement projects, etc.
   Phase IV. Sustaining: long range TQL planning, continuous process improvement, specialized TQL training, application of TQL to all levels of the organization, etc.

3. When did your organization adopt TQL?

   Month ___ Year ____

4. Does your host command (base) have an active TQL program?
   Yes ____ No ____

5. What is the "primary" reason your organization adopted TQL?
   Comply With Navy Requirement ____
   CBU Desire To Improve Performance ____
   Comply/Participate With Host Command TQL Program ____
   Other (indicate) _____

6. Who is responsible for running your TQL program?
   CBU ____ Host Command ____ CBU/Host Command ____
   Other(indicate)_____

7. Who initiated (started) your TQL program?
   CBU ____ Host Command ____
   Combined ____ (% Host Command Effort ____ % CBU Effort ____)
   Other(indicate)_____

8. Briefly list the major steps of your TQL implementation process (Example: Assessment of Organization, Training, Developed Mission/Vision Statement, Chartered Quality Improvement Teams, etc.).
   a._____
   b._____
   c._____
   d._____
   e._____
   f._____
   g. _____

9. Has your organization adopted other TQL philosophies than those prescribed by the Department of the Navy (Deming)?

Yes (indicate which) _____

No____ Not Sure ____

10. What "outside" assistance/support has your organization received which facilitated your implementation process? (Indicate source, Host Command, Brigade, etc.)

Training _____ Funding _____

TQL Literature _____ Facilitating _____

TQL Assessment Visits _____

Guidance _____

Other (indicate assistance and source) _____

_____

No Outside Support ____

11. What barriers did your organization face when implementing TQL?

Lack of Funding ____ Resistance to Change ____

Excessive Workload ____ Rushing Into TQL ____

Trying to Do It Alone ____

Lack of Support/Commitment From Upper Chain of Command ____

Other(indicate)_____

_____

_____

12. Where have you applied TQL?

Project Planning ____ Equipment Maint. ____ Supply ____ Safety ____ Construction ____ Quality Control ____

Customer Service ____ Military Matters ____ Unit Admin ____

Other(indicate area)_____

_____

_____

13. Has your organization developed methods for measuring performance and/or quality?

Quality Indicators _____ Key Performance Areas _____

Customer Feedback Forms _____

Yes(indicate)_____

_____

No_____

14. Have you "benchmarked" other organizations' successes?

Yes (briefly describe)

_____

_____

_____

_____

No_____

Note: Benchmarking is the process of improving organizational performance by adopting successful methods used by other organizations.

15. What TQL training has your organization received? Listed below are typical Navy training.

Intro to TQL (1 day) _____ Fundamentals of TQL (3 days) _____

TQL Team Skills (4 days) _____

Methods for Managing Quality (4 days) _____

Other(indicate)_____

_____

_____

16. Do you think TQL has significantly improved your organization's performance and quality of work?

Yes (indicate successes/improvements) _____

_____

_____

_____

No ____ Unsure (too early to tell) ____

17. What organizational problems can you attribute to TQL?

_____

_____

_____

_____

None _____

18. What suggestions or "lessons learned" can you provide which could improve the TQL implementation process for other CBUs?

_____

_____

_____

_____

19. Based on what you know about TQL, what is your personal opinion of it's use in CBUs.

_____

_____

_____

_____

_____

20.Comments:_____

Appendix D. Assistant Officer In Charge Survey

TOTAL QUALITY LEADERSHIP

SURVEY

CONSTRUCTION BATTALION UNIT

_____

(Assistant Officer In Charge)

1. Do you think TQL has significantly improved your organization's performance and/or quality of work?
   Yes (indicate successes/improvements) _____
   _____
   _____
   _____
   No ____ Unsure (too early to tell) ____

2. What organizational problems (pitfalls) can you attribute to TQL?
   _____
   _____
   _____
   _____
   None _____

3. What suggestions or "lessons learned" can you provide which could improve the TQL implementation process for other CBUs?
   _____
   _____
   _____
   _____

4. Based on what you know about TQL what is your personal opinion of it's use in CBUs.

5.Comments:

Appendix E. Mission/Vision/Guiding Principle Development

STRATEGIC PLANNING

MISSION DEVELOPMENT

1. WHAT DO YOU DO? (Product and Services)
   We deliver/produce/provide...

2. WHO DO YOU DO IT FOR? (Major Customer)

3. WHAT ARE THE UNDERLYING VALUES?
   Based upon foundation of...

VISION DEVELOPMENT

1. Describe, in present tense, the long range aspirations in relation to

   * Products and Services

   * Customers

   * Values

2. VISIONS are:

   * Concise

   * Compelling

   * Never Quantified

GUIDING PRINCIPLES DEVELOPMENT

1. The "HOW" of conducting day to day business activities

2. ACTION VALUES (Service Feature) We Will:

Appendix F. CBU Mission Statement

MISSION

We support Navy Fleet Hospitals, Naval Shore Activities and other customers with :

* Responsive quality construction and repair
* Disaster relief and recover humanitarian assistance, and civic action operations

We accomplish this by maintaining an aggressive readiness posture through training and development of military, technical, and leadership skills.

Appendix G. CBU Vision Statement

VISION

The Construction Battalion Unit is a unique, diverse, inspired professional team of fully trained Seabees. We are a military force providing quality, responsive construction, and repair and disaster relief services.

* We are the construction force of choice for reliable and cost effective Naval Shore Activity construction and repair
* We are the construction force of choice for responsive and reliable Fleet Hospital construction, maintenance and repair.
* We are rapidly deployable and fully capable of defensive combat operations
* Our skills are ideally suited and readily available to conduct disaster and recovery
* We meet and exceed the standards set by the Naval Construction Brigade in all areas of Seabee Operations, logistics, training, and administration
* We are a model of professionalism, commitment, and Espirit de Corps.

GUIDING PRINCIPLES

WE:

* Are honest and ethical
* Maintain continuous focus on customers (both internal and external).
* Are totally committed to the health and welfare of our people and their families.
* Remain focused on our Mission and Vision
* Succeed through continuous improvement, innovation, and team work.
* Are committed to excellence.
* Uphold the Navy core values of honor, commitment, and courage.

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VITA

Antonio Crusellas was born in Guayaquil, Ecuador on January 2, 1958, the son of Isabel Intriago Crusellas and Antonio Crusellas. After completing his work at Bergenfield High School, Bergenfield , New Jersey, in 1976 he entered the U.S. Air Force. In May 1981 he was honorably discharged from the Air Force and entered New Jersey Institute of Technology, Newark, New Jersey. He received the degree of Bachelor of Science from New Jersey Institute of Technology in May 1985. During the following years he was employed as an officer in the U.S. Navy. He was married to the former Miss Maria Hidalgo Cano on April 8, 1989. They have one son, Daniel. In December, 1995, he entered The Graduate School of the University of Texas.

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